

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) Electric compressor comprising:

a single-phase induction motor comprising a stator and a rotor;

a compressing mechanism driven by the motor; and

a hermetic container for accommodating the motor and the compressing mechanism and for pooling lubricant,

wherein the compressing mechanism includes:

a shaft having a main shaft and a sub-shaft, the main shaft comprising a first section having a first diameter and a second section having a second diameter smaller than the first diameter;

a cylinder for forming a compressing chamber;

an annular lubricant groove having an inner rim and an outer rim; and

a bearing for supporting the main shaft, the bearing defining in part the outer rim of the annular lubricant groove,

wherein the shaft includes:

a circumferential notch defining in part the inner rim of the annular lubricant groove, the circumferential notch having a lower axial surface;

a centrifugal pump opening into the lubricant;

a forward leading groove engraved on an outer wall of the main shaft, the forward leading groove extending to and opening at the lower axial surface of the

circumferential notch, and the forward leading groove having a first end communicating with the centrifugal pump and a second end opening to the inner rim of the annular lubricant groove;

a reverse leading groove having a lead directing in an opposite direction to that of the forward leading groove, the reverse leading groove extending to and opening at the lower axial surface of the circumferential notch, and the reverse leading groove having a first end communicating with the centrifugal pump via the second section of the shaft, and a second end opening to the inner rim of the annular lubricant groove; and

a vertical hole bored in the sub-shaft and having a first end communicating with the outer rim of the annular lubricant groove, and a second end opening into the hermetic container,

wherein the forward leading groove, the annular lubricant groove, and the vertical hole define a lubricant pathway such that (1) the lubricant passes from the forward leading groove to the annular lubricant groove, and (2) the lubricant passes from the annular lubricant groove to the vertical hole ~~without re-entering the forward leading groove~~.

2. (Previously Presented) The electric compressor of claim 1, wherein the reverse leading groove is formed at an intermediate section of the shaft.

3. (Previously Presented) The electric compressor of claim 1, wherein a cross sectional area of the reverse leading groove is smaller than that of the forward leading groove.

4. (Previously Presented) The electric compressor of claim 1, wherein a lead of the reverse leading groove is greater than that of the forward leading groove.

5. (Original) The electric compressor of claim 1, wherein the vertical hole slants with respect to a shaft center of the main shaft such that an upper section of the vertical hole slants outward.

6. (Previously Presented) The electric compressor of claim 2, wherein a cross sectional area of the reverse leading groove is smaller than that of the forward leading groove.

7. (Previously Presented) The electric compressor of claim 2, wherein a lead of the reverse leading groove is greater than that of the forward leading groove.

8. (Previously Presented) The electric compressor of claim 1, wherein an entire rounding section of the upper end of the bearing is chamfered and the annular lubricant groove is formed between the chamfered section and the main shaft.

9. (Previously Presented) The electric compressor of claim 1, wherein an angle of the reverse leading groove with respect to a plane perpendicular to an axis of the main shaft is larger than an angle of the forward leading groove with respect to the plane perpendicular to the axis of the main shaft.

10. (New) The electric compressor of claim 1, wherein the reverse leading groove, the annular lubricant groove, and the vertical hole define a lubricant pathway such that (1) the lubricant passes from the reverse leading groove to the annular lubricant groove, and (2) the lubricant passes from the annular lubricant groove to the vertical hole.

11. (New) Electric compressor comprising:

a single-phase induction motor comprising a stator and a rotor;

a compressing mechanism driven by the motor; and

a hermetic container for accommodating the motor and the compressing mechanism and for pooling lubricant,

wherein the compressing mechanism includes:

a shaft having a main shaft and a sub-shaft, the main shaft comprising a first section having a first diameter and a second section having a second diameter smaller than the first diameter;

a cylinder for forming a compressing chamber;

an annular lubricant groove having an inner rim and an outer rim; and

a bearing for supporting the main shaft, the bearing defining in part the outer rim of the annular lubricant groove,

wherein the shaft includes:

a circumferential notch defining in part the inner rim of the annular lubricant groove, the circumferential notch having a lower axial surface;

a centrifugal pump opening into the lubricant;

a forward leading groove engraved on an outer wall of the main shaft, the forward leading groove extending to and opening at the lower axial surface of the circumferential notch, and the forward leading groove having a first end communicating with the centrifugal pump and a second end opening to the inner rim of the annular lubricant groove;

a reverse leading groove having a lead directing in an opposite direction to that of the forward leading groove, the reverse leading groove extending to and opening at the lower axial surface of the circumferential notch, and the reverse leading groove having a first end communicating with the centrifugal pump via the second section of the shaft, and a second end opening to the inner rim of the annular lubricant groove; and

a vertical hole bored in the sub-shaft and having a first end communicating with the outer rim of the annular lubricant groove, and a second end opening into the hermetic container,

wherein the reverse leading groove opens into the inner rim of the annular lubricant groove to limit the flow of lubricant into the reverse leading groove when the motor rotates in a predetermined forward direction.

12. (New) The electric compressor of claim 11, wherein the forward leading groove opens into the inner rim of the annular lubricant groove to limit the flow of

Application No.: 10/552,532
Amendment Dated: November 23, 2010
Reply to Office Action of: July 23, 2010

MAT-8748US

lubricant into the forward leading groove when the motor rotates in a reverse direction.